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ABSTRACT

Lying and interpersonal manipulation seem to be in the communicational and behavioral repertory of all people, yet little scientific data are known about these phenomena. Deception and Machiavellianism in interpersonal verbal and nonverbal communication can be observed through content and interaction analysis as manifest in visible and audible displays of subjects' uncertainty, vagueness, nervousness, reticence, anxiety, restricted language usage, and "shifty" behavior. These observations are aided by content analysis of video tape recordings and use of an analog computer for statistical compilations. Lying can be discovered in the verbal and body language of subjects, but intentional Machiavellianism--interpersonal manipulation--cannot be observed with reliability by existing test procedures. (CH)

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AN EXPLORATION OF DECEPTION AS A COMMUNICATION CONSTRUCT

by

Mark L. Knapp, Roderick P. Hart, and Harry S. Dennis

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AN EXPLORATION OF DECEPTION AS A COMMUNICATION CONSTRUCT

Abstract

Even though most of us lie from time to time, it's really quite surprising how little we know about such behaviors. Through controlled observation and laboratory testing, this study attempted to determine what verbal and nonverbal behaviors were characteristic of intentionally deceptive communicators. Seventy-six video-taped interviews provided a data base for the analysis of thirty-two dependent measures. In addition to analyses of specific behavioral differences between deceivers and nondeceivers, the authors provide a conceptual framework for the study of deception--predicting that deceivers would exhibit significantly more uncertainty, vagueness, nervousness, reticence, dependence, and unpleasantness than would non-deceivers.

Few of us can escape the fact that lying has played an important role in the development, maintenance and the termination of human relationships. Widespread lip-service is given to the platitudes "honesty is the best policy" and "people should tell it like it is." To lie is to be labelled "undermining," "malicious," or "morally reprehensible." Persons from all walks of life extol the virtues of telling the truth, while decrying any act of deception. Well intended moralisms all.

Despite these fervent admonitions, duplicity seems to be a constituent of nearly everyone's communicative repertoire. The rudiments of lying are often learned at an early age, by observing the communicative strategies employed by parents and peers and by undergoing punishments for being truthful. From introspection alone, it seems clear that lying is an adaptive behavior first practiced in situations where it is a harbinger of success or, at least, promises to help us avoid negative sanctions. Thereafter, the selective force working for the continuation and escalation of lying is its efficiency in solving interpersonal or other problems. The fact that deception, as a communicative strategy, is often rewarded causes us to resort frequently to varying degrees of fabrication to suit our personal, pragmatic purposes. Cavil though we will at the fly-by-night salesman, lying works. In addition to rhetorical profit, Wolk and Henley (1970) see psychological dividends to be the due of the deceptive communicator:

> The sheer prevalence of lying does mean that a climate of deceit is the psychological weather of our age and that the person who can tolerate this climate with a minimum of stressful guilt will reap psychological benefits from the acceptance of the realities. . . . We believe that this civilization's climate of deceit makes lies not only unavoidable, but indespensible. They actually help people to preserve their emotional equilibrium. (p. 7)

In short, lying is publicly condemned, yet privately practiced by a significant proportion of the population; it is a phenomenon heavily laden

with various stigmata, yet a device that can be rhetorically effective; it is an ubiquitous entity which seems antithetical to the bywords of this era--"credibility" and "trust."

With these conflicting thoughts in mind, we undertook a diagnosis of deceptive communication by focusing on its message properties. Specifically, we asked two questions: (1) What verbal and nonverbal behaviors are characteristic of intentionally deceptive communicators? and (2) Does the degree of communicator Machiavellianism affect the manifestation of certain verbal and nonverbal behaviors during intentional deception?

The Deception Literature

Given the pervasive nature and potential influence of our penchant to fabricate, it is surprising how little we know about lying. At this point in time, almost any systematic study of deception must be labelled "exploratory." Indeed, the greatest number of research endeavors conducted to date have not even addressed themselves to identifying the verbal and nonverbal characteristics of deceptive communications; instead, they have attempted to discover whether or not people could recognize the beast when confronted with it. (See, for example, Fay and Middleton, 1941; Hildreth, 1953; Woodworth and Schlosberg, 1954; Maier, 1966; Maier and Janzen, 1967; Maier and Thurber, 1968; Shulman, 1973). The sum total of such research seems to be: unaided by mechanical equipment, untrained human observers can detect deceptive communications by strangers at, or slightly above, what would be expected by chance. Moreover, the accuracy levels reported for various polygraphic and voice print instruments are subject to considerable question, not to mention the impracticality of our using such techniques when trying to assess deception in everyday encounters.

Most pertinent to the concerns of the present research are the few studies which sought to identify verbal and nonverbal response patterns constitutive of intentional deception.[1] The slender threads of insight emerging from such studies might be subsumed under the following apparent manifestations of deception: (1) Anxiety Responses; (2) Excessive Responses; (3) Incongruous Responses; and (4) Indirect Responses.

Anxiety Responses

One popular notion holds that the act of deception is often accompanied by guilt or psychological stress. In such cases, according to the anxiety assumption, the deceiver will signal his discomfiture through overt (usually nonverbal) behavioral cues. Mehrabian's (1971) personality research discovered that introverted and highly anxious persons are less effective in concealing their deceptive maneuvers than are those who are more self-assured. On the other hand, inexperience with being deceptive may also increase the chances of a person's exhibiting anxiety-related cues. For example, one study (Exline, et. al., 1970) shows that subjects identified as being highly proficient at interpersonal manipulations (i.e., those who were high in Machiavellianism) were less likely to be detected during acts of deception than were those who were less interpersonally keen. Other studies by Ekman and Friesen (1969; 1972) have identified "hand shrug emblems" (e.g., signifying helplessness, inability, or uncertainty) and face-play manipulations by the hands (e.g., scratching the bridge of the nose) as being specific anxiety-related characteristics of deceivers. Alternatively, Mehrabian (1971) noted a high preponderance of speech errors in the messages of deceivers, while clinical and anecdotal reports detail the possibility of numerous other behaviors (e.g., blushing, voice tremors, shaking, gulping, and perspiring) as being anxiety-induced aspects of deception.

Excessive Responses

An anxious person may display very little bodily activity (i.e., he may be tense or rigid) or a great deal of movement (rapid posture changes, gestures, nervous self-touching, etc.). However, according to some research, it is only when such behaviors are perceived as exceeding the boundaries of "normality" in a given context that the suspicion of duplicity increases.[2] Sometimes, especially canny deceivers will attempt to eliminate cues felt to be associated with deception. In so doing, it is not unusual for them to cause certain other behaviors to be magnified or perseverated to the extent that overcompensation creates suspicion. Complex stuff this lying business!

We can all recall situations in which we felt that there was something strange about excessive laughter, pronounced pauses or silences, looking which seemed more like staring, stylized verbal responses which sounded rehearsed or "too slick." Mehrabian's work (1971) has discovered a series of such excessive cues--cues purportedly indicating negative affect. He found, for example, that deceivers nodded and gestured less, exhibited less frequent leg and foot movements, talked less and slower than did their more truthful counterparts. Exline and his cohorts (1970) add less eye contact on the parts of deceivers to the list. In another study (Motley, 1972) deceivers responding to questions requiring one word answers characteristically replied with significantly shorter responses than did non-deceivers. Excess on the verbal/vocal level may also be found in dramatic expressions of incredulity--e.g., "Who me?! You must be kidding!" Consistently defensive responses to seemingly unthreatening statements or questions may also be traits of some liars.[3]

Incongruous Responses

Because deception obviously requires us to make inauthentic statements, there are times when it is hard "to keep our stories straight"--verbally and nonverbally. When lying, we may make statements which seem inconsistent with one another; we may distort or contradict a fact already known by the receiver; we might cleverly attempt to neutralize others' suspicions of our believability--e.g., "You won't believe this, but . . ." Such oftentimes transparent verbal incongruities seem to have nonverbal counterparts. Nonverbally, incongruity may take the forms of micromomentary facial expressions--i.e., fleeting expressions of anger (less than a second in duration) given off while the face could otherwise be described as being "pleasant." (See, Haggard and Issacs, 1966.) Furthermore, Ekman and Friesen (1972) discovered that deceivers' behaviors were often "out of sync." (That is, deceivers refrained from emphasizing their remarks with what would otherwise be seen as natural, accompanying gestures.)

Indirect Responses

Deceivers may also be characterized by a lack of verbal and nonverbal directness. Verbally, such indirection may take the form of consistently evasive responses--e.g., not answering a question, changing the subject, answering a question with a question, etc. Nonverbal indirectness may be manifested by a communicator's lack of eye contact or by his standing some distance away from his addressee or by being less direct in body orientation toward same (See Exline, et. al., 1970, and Mehrabian, 1971).

It is obvious from such scraps of research that the behaviors thus far associated with intentional deception may also be present in other types of communication. Hence, for us quickly to infer duplicity on someone's part by seeing (or hearing) him manifest, say, incongruous cues, would certainly

be unwise at this point. If we believe the relatively virginal research in deception, there do seem to be at least four general response patterns closely linked to deceptive communications. But even here we must be cautious since these four response patterns are hardly mutually exclusive. For example, deceivers may display a good deal of smiling and facial pleasantness; while such behaviors may be a function of high anxiety, they could also be seen as constituting an overlapping of incongruity and excessiveness in certain situations.

Until the findings alluded to above are replicated more consistently and under a greater variety of circumstances, we can only make sophisticated guesses at who's telling the truth.[4] In an effort to ameliorate such a set of conditions, we undertook the following study.

Predictions

The four broad response patterns derived from previous research were useful in developing more precise hypotheses about intentional deception. It was predicted that, verbally and nonverbally, deceivers would exhibit significantly more: (1) Uncertainty; (2) Vagueness; (3) Nervousness; (4) Reticence; (5) Dependence; and (6) "Unpleasantness" (i.e., Negative Affect) than would non-deceivers. We also sought to discover whether the relative Machiavellianism of communicators would alter our predictions. In addressing ourselves to such issues, the following experimental framework was employed.

Method

Sample

The initial subject pool consisted of 140 randomly selected veterans, all older (average age was over 25 years) undergraduates at Purdue University. Thirty-eight veterans completed all the experimental tasks. Veterans were used because they comprised a relatively uniform group whose ego involvement with the experimental materials utilized was expected to be high. Participation in the study was voluntary, and nominal remuneration ($2.00) was provided all subjects, with additional compensation being contingent upon ratings of "communication effectiveness" by two independent judges.

Manipulations

The experimental exercise was accomplished in two phases, with the first phase preceding the second by three weeks. During phase one, subjects completed: (1) the short form of Christie and Gies' (1970) Machiavellian scale,[5] (2) a "position preference" instrument (composed of ten issues) whose pretest results demonstrated that the items used in the study were salient concerns for veterans, and (3) an "importance" scale for the same ten issues--to indicate which issue was perceived as being "most important" by the sample as a whole.

Data collected during phase one resulted in the selection of the issue, "V.A. Educational Benefits Should Be Increased to Finance the Cost of an Education Today," for use as the experimental message stimulus. The mean position preference and importance ratings on this issue were 1.08 and 7.80 respectively (on nine-point Likert scales where "9" was the high preference-importance anchor).

During phase two, subjects were professionally videotaped[6] for one minute each in two interview conditions. In one condition, subjects argued in favor of the proposition that educational benefits to veterans should be increased (a position corresponding to their true beliefs); in the other condition, subjects argued against the same proposition (this condition constituting the deception manipulation).[7] Two trained interviewers, both of whom adhered to a standard question format,[8] were counterbalanced across subjects and conditions to control for potential interviewer bias. Half of the sample spoke in support of the proposition first, and half initially spoke against the proposition. This procedure allowed us to determine if "stage" anxiety, apprehension, or other types of order effects contaminated any of the behaviors subsequently subjected to analysis.

Before each interview, subjects were given approximately five minutes to study a 100 word passage which listed typical responses to both sides of the experimental proposition. (This procedure was employed to minimize bias resulting from familiarity with the topic.) Subjects were not permitted the use of notes or cue cards during the interviews, thus insuring that their presentations would be somewhat spontaneous. In the deception condition, subjects were introduced to the interviewer with an alias and were instructed to respond <u>as if</u> they were not veterans but, in fact, college students who had no intentions of serving in the military. This device was implemented to make the "perception of deception" more acute for the subjects.

Finally, the subjects took part in the video-taped interviews and were subsequently debriefed and paid for their participation.[9]

<u>Design and Operational Definitions</u>

Observations for all analyses were cast in a 2 x 2 repeated (across subjects) matrix with the following independent variables:

Research Design

	Condition	
Machiavellianism*	Deceptive	Nondeceptive
High	n = 19	n = 19
Low	n = 19	n = 19

*--note. The sample median (92) was used to establish high and low Mach groups.

Three independent, trained coders viewed the video-tapes and verbatim transcriptions of the interviews. Inter-coder reliabilities were established for each category used in analysis. (The need to establish high observer agreement was considered paramount in this study, since many of the categories used in analysis required operational specificity seldom attempted, much less achieved, in this genre of research.)

Analysis of the interviews proceeded in three stages and focused on both verbal and nonverbal criterion measures. Since procedures for studying the presumed verbal and nonverbal concomitants of deception differed, they will be treated separately.

Nonverbal Analysis. In the absence of audio signals and without prior knowledge of the treatment conditions being observed, three coders were trained to score the following nonverbal behaviors with sufficient reliability:[10]

(1) Eye Contact Duration: Computed by noting the total amount of time a subject spent looking at the eye area of the confederate during the interviewing situation.

(2) Eye Contact Units: Total number of times a subject's eyes moved from a "non-look" position to a "look" position. A "non-look" position involved a S viewing something other than the eye area of the confederate, while the "look" position was defined as the obverse.

(3) Gestural Duration: Included the hand-arm portion of the body, with the wrist and hand being the major distinguishing factors. Involving both emblems and illustrators, this category included the total time a S spent gesturing horizontally or vertically (i.e., when his hands were not in a motionless or touching position).

(4) Adaptor Duration: A temporal measure including those moments during which the hands were used to manipulate foreign objects, clothing, or parts of the body. These "adaptors" are what we colloquially refer to as "nervous" or "fidgeting" behaviors.

(5) Nodding Frequency: Each clearly perceptible forward-backward motion of the head suggesting affirmation was recorded as one instance of nodding.

(6) Leg Movement Duration: Total time a subject moved his feet or legs during the one minute interview. Representative movements included changes in posture, crossing and uncrossing of legs, rapid twitching of the feet, etc.

(7) Smiling Frequency: Only included were major changes in facial affect; excluded were hard-to-distinguish "grins."

While in all cases the overall context unit for analysis was sixty seconds of dyadic interaction, methods of coding specific behaviors varied--stop watches were used for durational analyses and mechanical counters were used to assess frequency phenomena.

Verbal Analysis. Analysis of the verbal behaviors proceeded in two stages and involved both content analysis and computerized language analysis. For the content analysis portion of the study, a sign system was utilized, whereby any one statement could be assigned to multiple categories. For all but one category, a recording unit was defined as a sequence of verbalizations not interrupted by a recognizable nonfluency, or a pause exceeding three seconds, or an interviewer's probe.[11] The context unit for analysis consisted of all verbalizations made by a subject in the one minute allotted for his remarks.

Three content analysts, all of whom were experienced in communication research, went through a training session in order to become familiar with

the operational definitions and utilizations of the following content categories:[12]

(1) Factual Assertions: Statements which remark about an existing person(s), object(s), or set(s) of conditions that are empirically verifiable by the senses. ("Veterans currently receive only $264.00 per month in educational benefits.")

(2) Self-experience References: Remarks made by the speaker which expound upon actual experiences he has had (or is having) or upon activities he has engaged in (or is engaging in). ("When I first thought about joining the service, my recruitment sergeant promised me that educational benefits would be pretty liberal.")

(3) Other-experience References: Remarks made by the speaker which pertain to a set of conditions someone other than the speaker has been subjected to (or is being subjected) or activities someone other than the speaker has engaged in (or is engaging in). ("I have a married buddy who has to work two jobs in addition to going to school--just to survive!")

(4) Self-interest Statements: Factual or evaluative assertions which state that costs or benefits have (or have not) accrued, are (or are not) accruing, or should (or should not) accrue to the speaker. ("I realize that the economy is in bad shape but I can't see why I should be singled out to suffer.")

(5) Other-interest Statements: Factual or evaluative assertions which assert that costs are benefits have (or have not) accrued, are (or are not) accruing, or should (or should not) accrue to someone other than the speaker. ("Heck, the guys I served with went through some pretty tough times; shouldn't they be rewarded?")

(6) Bandwagon Remarks: Statements which suggest that other (known or unknown) persons agree with the assertion being made by the speaker. ("I haven't met a vet on this campus yet who doesn't feel that we need a bigger monthly allotment.")

(7) Hypothetical Remarks: Statements which refer to a set of conditions that has not obtained but which might or should obtain in the future. ("How would we pay our bills if the university were to increase tuition suddenly?")

(8) Disparaging Remarks: Assertions which serve to cast a favorable light upon the speaker by depicting unfavorable actions or statements of another person, group, or institution. ("Hell, we sweated it out in Vietnam while these other kids got to goof-off in school and have a good time.")

(9) Word/Phrase Repetitions: Words or phrases which are duplicated in series and which are not interrupted by a pause, or a speech error, or an interviewer probe. ("Of course, . . . of course we can afford to increase benefits for veterans that . . . that have served their country.")[13]

A different view of the verbalizations of the subjects was provided by subjecting their remarks to the dull-witted, but reliable, search proclivities of automated language analysis. Each of the seventy-six transcriptions were keypunched, analyzed by means of the TEXAN program (essentially a word frequency program capable of producing concordances and of computing language statistics), and processed by means of a CDC 6500. By being thus torn away from context so that language could be seen "in the raw," insights not made available by content analysis methodologies were provided. When cueing the program, the following categories were used as search vehicles:

(1) Stylistic Statistics: A host of statistics pertaining to word choice were made available by the language analysis program used. These included Total Words, Total Different Words, and, because they were carefully indicated during the transcription procedure, counts of Pauses of three seconds or more and Interviewer Probes were also provided. Finally, the relative presence of Speech Errors (quasi-verbalisms like uh, er, um, ah, etc.) was noted.

(2) Person References: Several of the hypothetical assumptions that informed this research centered about the extent to which "people" became a topic of conversation in the deceptive and non-deceptive interviews. Accordingly, Self-references (e.g., I, I'm, me, my, mine, etc.), Group references (we, our, us, our's, etc.), and Other references (they, they'd, them, etc.) were also scrutinized carefully by the TEXAN program.

(3) Temporal References: Because time and matters relating thereunto are oftentimes subtle indicies of attitudes and feelings, two crude, but often revealing, measures were designed to account for temporal emphases in the interview transcripts examined. These included Past References (e.g., was, were, has, had, etc.) and Future References (will, shall, etc.).

(4) Certainty Emphases: In order to get some feeling for the relative "strength" with which the subjects phrased their remarks, two measures were constructed which purportedly indicate the relative firmness of a series of verbalizations.

Absolute Verbs, a category which included all forms of the verb "to be," and Qualifications, which covered such tentative constructions as might, may, should, could, etc., were chosen as obverse measures of linguistic certainty.

(5) Leveling Emphases: If it is true that deceivers are sometimes "found out" because of their egregiously over-generalized statements, then it seems to follow that human observors are receiving such cues via linguistic markers. Thus, such common Leveling Terms as every, all, none, nobody, etc. were designated as being central to our linguistic probes, probes which hopefully revealed the relative "allness" of the statements made.

Because computerized studies of style are still in their infancy, some caution must be exercised before the results to be reported herein can be considered probative.[14] Still, the frequency with which words are used is surely a potentially important index of a person's inventional and linguistic habits.

Miscellaneous Analysis. In addition to the above mentioned modes of analysis, a number of temporal measures that cut across both the verbal and nonverbal dimensions were also constructed. Interaction Duration was defined as the total time the subject and the confederate spent in verbal interchange (the maximum possible time being one minute), while Message Duration included only those moments (before an interviewer probe) in which the subject himself was speaking (the maximum possible time again being one minute). In order to get an appreciation for the relative ease with which the deceivers and non-deceivers engaged in interaction, a Confidence Ratio for each subject was computed. This measure (total number of words spoken/interaction duration) was expected to be indicative of the extent to which a subject was able to search for words in order to keep the conversation "alive."

Summary

Returning for a moment to the overall purpose of our study--that of carefully describing the verbal and nonverbal traits of deceivers--we can

now consider the relationships between our research questions and our analytical probes. The following list indicates the ways in which we expected deceivers in our study to manifest their duplicity. In comparison to non-deceivers, we hypothesized that deceivers would be more:

1. Uncertain: Fewer Absolute Verbs, lower Confidence Ratio, and fewer Total Different Words; more Qualifications and Hypotheticals.

2. Vague: Fewer Factual Assertions, Self-experience References, Other-experience References, and Past References; more Leveling Terms and Future References.

3. Nervous: More Speech Errors, Word-Phrase Repetitions, Adaptors, Leg Movements; fewer Gestures.

4. Reticent: Fewer Total Words and shorter Message Duration and Interaction Duration; more Pauses and Probes.

5. Dependent: Fewer Self-references and Self-interest Statements; more Bandwagon Remarks and Other References.

6. "Unpleasant" (Negative Affect): Fewer Nods, Smiles, Eye Contact Units, Other-interest Statements, Group References, and shorter Eye Contact Duration; more Disparaging Remarks.

The various forms of analysis thus being constructed, operationalized, and applied, the following results appear to be responsive to the research questions posed previously.

Results

Data Analysis

Since neither speaking order (arguing pro or con first) nor interviewer bias significantly affected the data, we proceeded with the following analyses. The twenty-six behaviors which were coded by frequency of occurrence were treated nonparametrically and the six which necessitated durational analyses were dealt with parametrically.[15] In both cases, a repeated measures test was applied (when applicable) to increase the

precision of analysis. Means were generated for all comparisons (including nonparametric) so that the predicted differences between experimental conditions could be illustrated meaningfully. One-tailed tests were applied to deceptive/non-deceptive comparisons, and two-tailed tests were used in the assessment of differences between high and low Machs.

For reading economy, all statistical tests are summarized in Tables 1 and 2. Table 1 reports the results of tests applied to differences between deceivers and nondeceivers; Table 2 shows how high and low Machs differed from each other across the thirty-two dependent variables. There were no significant interactions between deception and Machiavellianism; hence, for the six parametric variables studied, only main effects are reported in Tables 1 and 2.

Deceivers and Non-deceivers

The primary thrust of this research was based on thirty-two predicted behavioral differences between deceptive and non-deceptive communicators. For twenty-six of the thirty-two variables studied, deceivers and non-deceivers behaved in the predicted ways. While "chance" may have been influential in determining some of these differences, Table 1 shows fourteen statistically significant differences ($p < .05$) between deceivers and non-deceivers. Since many statisticians caution against being victimized by .05 myopia when conducting exploratory studies,[16] we also took note of three other variables which obtained predicted differences at or below $p < .10$.

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Insert Table 1
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Machiavellianism

Since the term "Machiavellian" is often directly associated with duplicity, it seemed reasonable to question whether or not such a personality construct

would affect deceptive communications. Table 2 reveals only three statistically significant differences--with two other variables approaching significance ($p < .10$)--between high and low Machs. It was felt initially that the apparent impotence in this study of this seemingly powerful behavioral style was possibly due to the conservative method (division at the sample median) used to isolate high Machs and low Machs. In an effort to note any depressing effects on our results engendered by such procedures, a post hoc analysis using only twenty subjects (ten highest Machs and ten lowest) was conducted. The results did not significantly differ from those presented in Table 2.

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Insert Table 2
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Discussion

For those wishing to take our results and apply them in wholesale fashion to the Watergates of this world, a note of caution is in order. Because this investigation was conducted in experimental surroundings, a number of disclaimers against generalizing from our data are mandated: (1) a "role-playing" technique was used to encourage deception; (2) conversations took place between strangers; (3) a relatively homogeneous group of subjects was studied; (4) the parameters of the topic for discussion were relatively tight (5) only a limited amount (one minute per subject) of "deceptive" and "nondeceptive" behavior was subjected to analysis. Only until further studies in the area view deception from manifold perspectives--namely, by varying topics of conversation, acquaintanceship of communicators, spatial and psychological contexts--will the researcher be able to appear on To Tell the Truth and stump the panel.

Still, the results gathered in this study look promising. Although our thirty-two behavioral styles were subsumed under six superordinate categories in rather arbitrary (but common sensical) fashion, each of the six appears to illuminate at least a portion of the matrix of deception. Let's consider each of them separately:

Uncertainty

Two measures which we expected would be especially sensitive measures of certainty (Absolute Verbs and Qualifications) could only discriminate between deceivers and non-deceivers at levels of confidence (.11 and .17 respectively) considered to be unconventional as bases for generalizing. Because they behaved in relationship to each other as expected and because scores on these two dimensions proved to be in the predicted directions, however, future studies in the area should probably not forsake such linguistic probes.

Deceivers did prove to be significantly "uncertain", however, when two other facets were considered. The scores on the Confidence Ratio revealed that deceivers were less able to use language to "fill in the interaction time" than were non-deceivers. Ostensibly, deceivers were worried about making verbal gaffes, and thus chose to allow silences to perseverate (a finding which is corroborated by our results on the reticence dimension, discussed below). Similarly, deceivers appear to have a relatively "restricted code," in that they used significantly fewer different words than did those who spoke truthfully. Unexpectedly, deceivers did not characteristically use hypothetical statements to manifest their uncertainty. This does not, however, negate the usefulness of such a construct for studying deception under other circumstances.

Vagueness

Probably one of the hardiest of anecdotal observations that people tend to make of supposed deceivers is the latter's tendency to equivocate. If the

results of this study are vindicated by replication, circomlocution may indeed be a trait of (at least) untrained deceivers. Deceivers made fewer factual statements, mentioned their own experience less often, and generally referred to past (and hence verifiable) events less often than did non-deceivers. In addition, deceivers generally took the linguistic option of making sweeping, nonspecific statements, as shown by their tendency to use leveling or allness terms in prodigious quantity. While significant differences on the other two measures of vagueness (Future References and Other Experience References) did not discriminate among deceivers and non-deceivers, it seems safe to say that our communicators were fairly oblique when plying their deceptive wares.

Nervousness

While these researchers did not have access to a mechanical device for measuring nervous perspiration, there is reason to believe that a certain amount of nervous behavior may indeed be indicative of our duplicity. Self-object adaptors (nervous mannerisms which involve random self-touching, playing with foreign objects, etc.) seem to discriminate powerfully between deceivers and non-deceivers. Many of the subjects we observed in this study would fidget with their glasses or finger the crease in their trousers while "deceiving," and yet display no such abberations in the non-deceptive condition. On the other hand, although directional "trends" can be seen in every case, deceivers did not significantly exhibit more Speech Errors, Leg Movements, or Gestural Movements (nor did they repeat themselves more often) than did non-deceivers.[17]

Reticence

One of the most fascinating findings of this study corroborates one of our "folk" observations of deceivers--liars tend to talk less than those

who are ostensibly telling the truth. In our study, deceivers showed their true colors by using fewer words, by employing a shorter message duration ($p < .079$), and by opening themselves up to more probe questions by their interviewers than did non-deceivers. While deceivers also consumed less total time with their verbalizations and paused more often than did non-deceivers, they did so only meaningfully, not significantly. In short, it appears that the wary deceiver is well-advised to overwhelm the suspicions of others by talking at break-neck speed, unless, of course, by doing so he exhibits signs of nervousness!

Dependence

When first conceiving of this study, we suspected that deceivers often attempt to "disassociate" themselves from their deceptive behaviors. That is, it was predicted that because my deceptive words are not really my words, I will attempt to (perhaps unconsciously) "stand back" from my verbalizations by investing less of myself in my remarks than I would under normal conditions. This indeed seems to be the case.

Deceivers in this study referred to themselves less often ($p < .10$) and claimed self interest motives less frequently than they did when speaking truthfully. Our low inter-coder reliabilities on bandwagon statements probably mitigated against our finding differences between deceivers and non-deceivers on this dimension, but the fact that deceivers consistently referred to "them" (Others References), probably indicates a disassociation phenomenon at work in intentional deception. In short, the "average" dependence statement observed in our study probably looked something like the following: "One (no Self Reference) cannot help but think that increased veterans' benefits should not be given to them (Other Reference) since it would not be for the good of the country (no Self-interest Statement)."

"Unpleasantness" (Negative Affect)

On the assumption that communicators would be nervous, reticent, and vague when speaking with forked tongue, we reasoned that such a complex of behaviors would result in their being minimally attuned to the needs of their communicative partners and also unconcerned about interpersonal bonds in general. Amorphous though our negative affect category is, there appear to be some threads of insight contained therein.

As many astute analysts of human behavior have observed, liars won't look you in the eye. While detesting such home-spun aphorisms, we are compelled to report that this does indeed seem to be the case. In our study, deceivers not only exhibited fewer mutual glances, but maintained eye contact for shorter durations than did non-deceivers. Presumably, the "tension" they experienced when (in the words of Gulliver), "speaking that which is not," was great enough to mandate self consciousness.

While Affirmative Nods, Smiles, and Other Interest Statements did not discriminate between deceivers and non-deceivers, the findings on two other variables suggest some degree of "social distance" on the parts of deceivers. Deceivers used significantly fewer group references than did non-deceivers and, in addition, made many more disparaging remarks. While the former result may be a function of the experimental setting ("we", after all, usually referred to "we, the veterans"), the second result is intriguing. The high incidence of disparaging remarks found in the transcripts may suggest a certain amount of defensiveness (or, perhaps, offensiveness) on the parts of deceivers--a condition not totally unexpected in deception.

Further studies of deception should, of course, attempt to replicate the findings reported here. In addition, however, it will be necessary to take these bits and pieces of insight and weave them into some sort of theoretical

fabric. At face value, it appears that the six behavior styles we are associating with deception are really very natural, common traits of us all. Apparently, however, deceivers exhibit such traits excessively, thus throwing themselves out of the bounds of "normality."

Machiavellianism

The reader will recall that two-tailed tests were used when treating the data in the Machiavellian portion of the study. Such an accommodation was forced upon us by the nature of the phenomenon being investigated--we didn't know what would happen.

Recapitulating, no interaction effects were observed between deception and Machiavellianism. That is, high Machs behaved similarly in both the deceptive and non-deceptive conditions; the low Machs followed suit. It should be noted, however, that interaction effects could only be derived from the parametric analyses applied to six duration variables; hence, other interactions may exist but remain uncovered due to the measurement-strategies used in this study.

High Machs did use more different words, more total words, and fewer affirmative nods than did those who scored low on Machiavellianism. Post hoc tests using only the ten highest and ten lowest Machs did not change these results.

While this study has done little to improve our understandings of the behavioral concomitants of Machiavellianism, we do know a good deal more about deception. We know that there are at least fourteen communicative differences between deceivers and non-deceivers. We know enough to hypothesize that six broad behavioral styles may indeed be characteristic of deceivers. We know also that only continued research in the area can indicate whether we know what we think we know.

Implications

As long as man has talked, he has probably deceived. As long as man has deceived, other men have attempted to discover how and why it's done. For all of our lying and studying-of-lying, it is remarkable how abysmal is our knowledge of the subject. While the findings reported here may help to reveal some of the important concomitants of deception, a troublesome issue still skulks in the background--what is deception?

The answers come furiously: "Deception is deliberately concealing information." The answers come tautologically: "Deception is not telling the truth." And the answers come theologically: "Deception is composed of white lies and black lies." If these remarks reflect current understandings of deception, then an inductive study (such as ours) which simply describes two different behavior styles, and labels one deception and the other non-deception, is not totally off the mark at this point. When one considers the sociological, psychological, and philosophical dynamics feeding deception, the construct deserves the attention of an army of scholars.

Foremost among such scholars of deception might well be the student of communication. By attempting to describe the communicative aspects of deception, researchers may, ultimately, back their ways into a fuller understanding of the concept. Since physiological approaches to deception have met with only differential results, perhaps it is the trained analyst of human communication who can best guide our tour into the underworld of duplicity.

And the tours may well go in different directions. In this study, experimental artificiality may have induced behaviors not generally characteristic of liars. Field studies of deception, if indeed such are possible, may help us to understand behaviors otherwise mitigated by awareness of the video-tape machine. In addition, the development of more

precise and valid searching instruments is needed if students of communication are to understand the complexities of deception, communication, and the interaction of the two. After further exploratory studies such as the present one are run, more rigid controls and high powered statistical tests may become appropriate for investigating deception. It is also conceivable that to study deception as a set of communicative behaviors would be to generate novel insights into such contiguous areas of research as interpersonal trust, persuasion, and source credibility.

The "real world" also beckons. Any self-respecting cynic is aware that deceivers come in all shapes and sizes, that there are "professional" and "non-professional" deceivers, that a veritable spectrum of motivations resides in even the most practiced deceiver, and that successful deception makes a difference in the world of police interrogations, in high finance imbroglios, and in the investigatory chambers of the U.S. Senate. After attempting to explain the verbal and nonverbal correlates of deception, the communication researcher might then turn over his findings to the psychiatrist (or to the theolgian) who then may be able to explain why people lie in the first place. If he is hardy enough to resist the unctuous strains of those who decry the study--never mind the practice--of deception, a researcher in this area may contribute to our understanding of human communication in important, albeit untoward, ways.

FOOTNOTES

[1]Deception may take many forms. The word "intentional" designates the perspective used in this study. We are only concerned here with conscious additions or subtractions from what a communicator perceives as the truth.

[2]The perception of "excessiveness" is often closely tied to the familiarity of the communicators. Sometimes, a close relationship may make one particularly sensitive to atypical or excessive communicator behaviors; in other instances, familiarity with the communicator may "dull" or inhibit the perception of unusual behavior.

[3]Some of the verbal traits of deceivers alluded to here were derived from a content analysis of over 200 open-ended responses from subjects who were asked to list common verbal strategies employed during deception. We were unable otherwise to find any systematic research which focused on verbal deception strategies.

[4]An important area of research that has not been discussed in this review of the literature, but which bears relevance to studies of deception, is that of counterattitudinal advocacy. Since most of such studies have not treated the message as a dependent variable, they have not been cited here. However, future research in the area of deception may borrow profitably from the insights derived in counterattitudinal studies. For a most readable summary of such literature, see G. R. Miller and M. Burgoon, New Techniques of Persuasion (New York: Harper, 1973), pp. 59-101.

[5]In Studies in Machiavellianism (New York: Academic Press, 1970), Richard Christie and Florence Geis, report a split-half reliability of .79, using nine large samples. We obtained a split-half coefficient, corrected for halves, of .87 with the veteran sample.

[6]A special effects technician, working with two Marconi Mark IV TV cameras, used a split-screen technique to provide two simultaneous analytical perspectives: one of the entire subject, and one close-up of the head region.

[7]Subjects were not "forewarned" during phase one that they would be speaking against their beliefs in phase two. In fact, they had no knowledge about the topic which would be discussed until they arrived at the experimental laboratory. At this time, the E explained that the counterattitudinal position was

necessary so that effective arguments supporting increasing VA benefits could be constructed. To insure that subjects would be motivated equally in both conditions, an "additional compensation system" was explained by which (contingent upon performance in both conditions) up to twenty-five dollars could be awarded.

[8]The interviewers initiated the interview in each condition by asking a single open-ended question requiring the Subject to explain his position on the proposition. In the event that the Subject terminated his response before one minute had elapsed, the interviewer was instructed to initiate a neutral probe. Finally, interviewers were cautioned to be attentive to the Subjects while the latter were responding, but not to provide any other evaluative, (verbal or nonverbal) feedback that might otherwise influence the Subjects' behaviors.

[9]It should be noted that this study was run in conjunction with certain consultation services the authors were providing for the campus veterans' organization at the time. The cooperation of this group is gratefully acknowledged.

[10]Inter-coder reliabilities obtained using the Kendall Rank Procedure were: (1) nods, .94; (2) smiles, .63; (3) eye contact units, .95; (4) eye contact duration, .97; (5) leg movement duration, .85; (6) gestural duration, .99; and (7) adaptor duration, .76. All correlations were significant ($p < .05$) with the exception of smiles.

[11]While such obviously uneven recording units may appear to be sources of bias in data collection, no such effect was noted. Post hoc analyses indicated that no significant differences in the number of recording units obtained from condition to condition. The importance of such results is heightened by the fact that the recording units chosen accounted, in a very natural sense, for the undulations of oral discourse, a phenomenon bereft of such hardy points of demarcation as periods, commas, and semicolons.

[12]The following inter-coder reliabilities were obtained for the categories constructed for the content analysis: (1) factual assertions, .96; (2) self-experience references, .92; (3) other experience references, .83; (4) self-interest statements, .88; (5) other-interest statements, .91; (6) bandwagon remarks, .38; (7) hypothetical remarks, .89; (8) word-phrase repetitions,

.84; and (9) disparaging remarks, .78. All correlations were significant ($p < .05$) with the exception of bandwagon remarks.

[13]For this category, the recording and context units used in analysis were equal (i.e., all verbalizations made in the one minute interview), since some word/phrase repetitions would have carried over from one of the original recording units to the next.

[14]The theoretical rationale underlying the use of these and other language analysis categories can be found in R. P. Hart, "Verbal Certainty as a Rhetorical Construct: A Methodological Foray," (manuscript in preparation).

[15]For the 2 x 2 repeated ANOVAs, the following source was consulted: B. J. Winer, Statistical Principles in Experimental Design (New York: McGraw-Hill, 1972), rev. ed. For the Wilcoxon T and Mann-Whitney U tests, we consulted: S. Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill, 1956). ANOV tables and rank values can be obtained from the investigators.

[16]W. L. Hays, Statistics for Psychologists (New York: Holt, Rinehart & Winston, 1963), p. 300. Strict adherence to a conventional level of significance (.05) would, in our opinion, do injustice to subsequent research designed to refine and extend the generality of our findings.

[17]It is interesting that Self/Object Adaptors discriminated clearly between deceivers and non-deceivers and that other "nervous" mannerisms like Leg Movements and Speech Errors did not do so. Perhaps it is the case that because we are so unaware of using such adaptors when talking that we cannot as easily monitor or control them (as we can other verbalizations and body movements).

Table 1

Behavioral Correlates of Deceivers and Nondeceivers

Variables	Means: Deceivers	Means: Nondeceivers	Obtained p value[a]	T[b]	F[c]
UNCERTAINTY					
Absolute Verbs	4.54	5.05	.111	286.5	
Confidence Ratio	3.08	3.40	.007	201.0	
Different Words	87.95	97.55	.005	171.0	
Qualifications	2.64	2.13	.171	305.0	
Hypotheticals	1.03	.92	.309	194.5	
VAGUENESS					
Factual Statements	1.89	2.74	.004	111.0	
Self Experience	.74	2.29	.001	57.0	
Other Experience	3.08	2.84	.207	281.0	
Past References	.39	1.35	.005	84.0	
Leveling Terms	1.15	.68	.039	182.0	
Future References	.05	.14	.154	17.5	
NERVOUSNESS					
Speech Errors	5.02	4.48	.471	347.0	
Word/Phrase Repetitions	2.74	2.13	.139	155.5	
Adaptor Duration	8.61	2.42	.009		7.56
Leg Movements	11.26	10.02	.530		.55
Gestural Duration	12.47	15.42	.270		1.25
RETICENCE					
Total Words	154.10	170.82	.006	200.0	
Message Duration	52.08	55.10	.079		3.19
Interaction Duration	56.58	58.24	.131		2.35
Pauses	.13	.09	.232	104.0	
Probes	.69	.28	.015	53.5	
DEPENDENCE					
Self References	3.09	3.79	.099	282.0	
Self Interest	.21	1.10	.001	5.5	
Bandwagon	.13	.15	.367	12.0	
Other References	3.70	1.58	.001	82.0	
NEGATIVE AFFECT					
Affirmative Nods	1.60	2.29	.324	196.5	
Smiles	.58	.47	.312	27.5	
Other Interest	1.05	.97	.333	146.5	
Eye Duration	20.08	23.76	.008		7.96
Group References	.43	.91	.032	112.0	
Eye Contact Units	9.55	10.10	.096	181.5	
Disparaging Statements	.84	.08	.001	7.5	

[a] All nonparametric p values are one-tailed.

[b] T's computed for Wilcoxon matched-pairs signed-ranks test.

[c] df=1, 36 for F computations. F values reflect main effects within.

Table 2

Behavioral Correlates of Machiavellianism

Variables	Means Hi Machs	Means Lo Machs	Obtained p value[a]	U[b]	F[c]
UNCERTAINTY					
Absolute Verbs	5.10	4.48	.164	588.5	
Confidence Ratio	3.48	3.01	.174	591.5	
Different Words	97.13	88.37	.042	526.5	
Qualifications	2.43	2.33	.347	631.5	
Hypotheticals	1.05	.89	.411	648.0	
VAGUENESS					
Factual Statements	2.47	2.16	.636	677.5	
Self Experience	1.58	1.45	.689	685.0	
Other Experience	2.87	3.05	.933	714.0	
Past References	.77	.97	.692	685.0	
Leveling Terms	.98	.84	.882	708.0	
Future References	.14	.04	.152	641.0	
NERVOUSNESS					
Speech Errors	4.15	5.36	.426	645.5	
Word/Phrase Repetitions	2.95	1.92	.204	602.0	
Adaptor Duration	5.10	5.92	.760		.09
Leg Movements	7.66	13.63	.194		1.73
Gestural Duration	13.74	13.97	.960		.01
RETICENCE					
Total Words	171.21	153.71	.047	531.0	
Message Duration	53.66	53.53	.965		.01
Interaction Duration	57.58	57.24	.844		.04
Pauses	.10	.12	.344	646.0	
Probes	.33	.64	.438	657.5	
DEPENDENCE					
Self References	3.59	3.30	.414	643.5	
Self Interest	.71	.60	.613	680.5	
Bandwagon	.21	.08	.100	627.0	
Other References	2.18	3.11	.435	647.0	
NEGATIVE AFFECT					
Affirmative Nods	1.37	2.53	.004	463.0	
Smiles	.34	.71	.204	619.5	
Other Interest	1.26	.76	.074	463.0	
Eye Duration	22.47	21.37	.729		.12
Group References	.57	.76	.937	715.0	
Eye Contact Units	10.34	9.31	.230	607.0	
Disparaging Statements	.52	.39	.490	667.0	

[a] All nonparametric p values are two-tailed.

[b] U's computed for Mann-Whitney test.

[c] df=1, 36 for F computations. F values reflect main effects between.

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